

REMARKS/DISCUSSION OF ISSUES

Applicant thanks the Examiner for acknowledging receipt of the claim for priority and all certified copies of priority documents.

Applicant thanks the Examiner for acknowledging acceptance of the drawings.

Claims 1 and 2 are pending in the application.

Claims 1 and 2 are rejected under 35 USC 103 (a) as being unpatentable over Hardies (US 4,015,165) in view of Driessen et al. (US 4,501,799).

Hardies teaches a lamp having molybdenum electrodes with a corrosion-resistant covering chosen from nickel, manganese nickel, nickel-plated brass, nickel-plated iron, chromium-plated iron, electroplated iron, platinum, gold, chromium, iridium and ruthenium (col. 1, lines 55-60). These materials are all either metals, metal alloys, or composite metallic structures.

In contrast to the teachings of the reference that the protective covering for the molybdenum electrodes must be a metal sleeve, Applicant provides a protective layer of either titanium nitride or chromium carbide, neither of which materials is a metal or metal alloy or composite metal, but rather are ceramic compounds.

As pointed out in Applicant's prior response, ceramic materials would not be considered by the skilled artisan to be an obvious substitute for metals in any application, and particularly in an application where good electrical connection is required.

Moreover, it would not be obvious to select only titanium nitride and chromium carbide from among the universe of

available ceramic materials, or even from among the many different nitrides and carbides which are known. Such choice was not arbitrary, but was made in order to obtain optimum properties for the particular application, including ability to form a highly corrosion-resistant coating on molybdenum by CVD, ability to form good welds to the coated electrodes, and ability to form good electrical contacts with the coated electrodes.

By logical extension, it would not be obvious to provide such materials in the claimed thicknesses, in order to provide sufficient corrosion protection, while still enabling the achievement of good welds and good electrical contacts.

In response to Applicant's prior arguments with respect to Hardies, the Examiner now cites Driesssen et al., who teach a lamp discharge vessel of a ceramic such as sintered alumina bonded to a metal with a bonding material having a complex ceramic composition including alumina and a rare earth oxide.

Driesssen et al. do not use the bonding material to provide a corrosion resistant coating for the portion of lamp electrodes which extend outside the lamp envelope, as claimed by Applicant, but rather to bond an electrode feed through of a metal (or alloy) such as niobium to the wall of the ceramic discharge vessel. See col. 1, lines 24-27.

Moreover, the bonding material of Driesssen et al. is not selected from titanium nitride and chromium carbide, but is a complex composition containing aluminum oxide (alumina) and a rare earth oxide.

There is absolutely no teaching by Driesssen et al. regarding the suitability of their bonding material for use as a corrosion-resistant coating for electrodes, and if there were, it would suggest the use of the disclosed alumina/rare

earth oxide composition, not titanium nitride or chromium carbide, and thus would actually lead away from Applicant's claimed invention.

Since Driesssen et al. teach nothing with regard to the use of the bonding material as a coating for a molybdenum electrode, they teach nothing with respect to any critical coating thickness, let alone the specific range of 2-3  $\mu\text{m}$  set forth in claim 2.

Accordingly, it is felt that the rejection of claims 1 and 2 under 35 USC 103(a) is in error, and should be withdrawn.

In view of the foregoing, Applicant respectfully requests that the Examiner withdraw the rejection of record, allow all the pending claims, and find the application to be in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,



John C. Fox, Reg. 24,975  
Consulting Patent Attorney  
203-329-6584